Clocking Out: Temporal Patterning of Retirement[1]

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This article draws on life history data of the cohorts of recent U.S. retirees to examine the temporal patterning of retirement. Three major dimensions—historical context, social heterogeneity, and, most important, biographical pacing, measured by cohort, gender, and career pathway, respectively—operate simultaneously, yet unevenly, to affect various aspects of the retirement process. Findings suggest that changes over the past few decades have undermined the regularity in retirement timing that was a product of the convergence of diverse institutional features, anchored by a large core of men on traditional career tracks. Focusing on retirement, our model underscores the multiplex nature of the temporal structuring of the life course.

Two major trends characterize changes in retirement age over the past few decades, changes that have drastically altered its temporal frame. One is in the central tendency of its timing, and the other is in its variability. The downward shift in average age at retirement, at least for men in the West, has been amply documented (for reviews, see George [1993]; Guillemard and Rein 1993; Atchley 1982). This trend has been sustained and substantial, especially pronounced since the 1970s (cf. Quinn and Burkhauser 1994). Furthermore, as Kohli and Rein show (1991), it can be distinguished from a trend that gradually lowered the age of "normal" withdrawal from the labor force as pension systems were created and expanded from the late 19th century to the 1970s. It is described as "one of the most profound structural changes in the past 25 years" (Kohli and Rein 1991, p. 1).

But, perhaps of more import, the variability in the timing of retirement

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has increased significantly during the same period. By the mid-1960s, age 65 had become the age around which retirement clustered in the United States, making it an effective reference point for a variety of purposes. Now, however, the transition is less clear-cut. The age-graded norm in retirement has become blurred, and the actual range of retirement age has expanded, making the transition "longer and fuzzier" (Kohli and Rein 1991; for reviews, see Settersten and Mayer 1997; George 1993; cf. Modell 1989; Rindfuss, Swicegood, and Rosenfeld 1987; Hogan and Astone 1986). It is becoming "destandardized" (Guillemard and Rein 1993), "deinstitutionalized" (Guillemard and van Gunsteren 1991), and "age-irrelevant" (Neugarten 1979). As a result, what has long been regarded as the conventional age of retirement, age 65, is no longer "normal," or normatively prescribed (cf. Marini 1984).

The pairing between the lowering of average age at retirement and its increasing variability is peculiar, especially in the context of the historical trend of increasing institutionalization of life course transitions. Other than the fact that they have occurred concurrently, the relationship between the two is not self-evident and as yet is largely unexplored.

We consider the retirement transition to be a matter of contingent timing. Three major dimensions—historical context, social heterogeneity, and biographical pacing—are put forth, on which, we argue, retirement is timed. They act, either alone or in combination, upon a set of behaviors that affect when a person retires. Examining life history data of the cohorts of recent retirees, we identify and articulate these dimensions that pattern retirement timing. Our focus, in particular, is on the concept of biographical pacing and its role in timing retirement.

In the next section, we review the extant literature and elaborate upon a life course framework to formulate a multiplex time model of retirement. We discuss the three major dimensions involved in retirement timing and consider the ways in which these disparate, yet interacting, threads may be interwoven. Following a description of the data and measures, we identify a set of career pathway types. We then analyze the data and discuss findings within the framework of our proposed model of multiplex time. In conclusion, we locate the results in broader contexts and discuss several theoretical implications.

INSTITUTIONALIZATION AND DEINSTITUTIONALIZATION OF RETIREMENT TRANSITION: A LIFE COURSE PERSPECTIVE

Until recently, historical developments in retirement had been in the direction of increased universality and decreased variability (Ransom and Sutch 1986; Anderson 1985; Graebner 1980). By the 1960s, retirement had become fully generalized in the United States as a normal feature of the

life course. Throughout industrialized societies, it became more prevalent and more tightly keyed to chronological age, establishing a standardized life course regime (Kohli and Rein 1991; Atchley 1982). Although the process affected primarily men's lives, women too have increasingly been incorporated into this regime with the rise in their labor force participation (Moen 1985). Societal regulation of retirement as such was primarily based on, and aligned with, a set of institutions—welfare systems broadly defined, including the state. Previous studies have thus identified a number of legal and regulatory changes (e.g., the legislation of the Social Security Act and Employees Retirement Income Security Act) and shifts in pension systems (e.g., the spread of private pension plans and the changing balance between public and private pensions) as determinants and conditions of the institutionalization of the retirement transition. They have depicted the modal transition pattern as reflecting conformity to normative timetables and constraints in opportunity and incentive structures (Guillemard and Rein 1993; George 1993; Kohli and Rein 1991; Mayer and Schoepflin 1989; Tuma and Sandefur 1988; Atchley 1982; Neugarten and Hagestad 1976).

Changes in recent years, however, have been so drastic in magnitude and variant in direction that the existing paradigm requires a critical reappraisal. The high degree of temporal regularity observed in the retirement regime of the 1960s and 1970s might have been more the exception rather than the rule. It was, we argue, a result of a multitude of factors coalescing and coinciding around a specific age, which in turn became defined as normative post hoc. The very definition of life course, "age-graded life patterns embedded in social institutions and subject to historical change" (Elder 1992, p. 1121), presupposes just such a contingent development of age-graded transition norms (see also O'Rand 1996; Mayer and Tuma 1990). Thus, undoing of the old regime, in which this extraordinary convergence around a single reference point occurred, seems to be a more natural progression than a startling deviation. Recent developments in the timing of retirement render visible the process in which these multiple threads, which were for a time brought together and kept in sync, are being pulled apart from one another.

A variety of factors have undermined the old regime. Three that pertain to the changes in the larger context—institutional, economic, and demographic—have primarily been the focus of previous research. First, there have been considerable changes in institutional arrangements around retirement. Oftentimes, however, they produce conflicting pressures. For example, whereas the age of eligibility for Social Security benefits has been lowered to 62 from 65, legislative measures have upwardly revised or eliminated mandatory retirement age. Another case in point: private pension funds encourage early exit, while recent public policy seems to

favor retarding the process (Guillemard and Rein 1993; Henretta 1992; Parnes and Nestel 1981). The confluence of policies and practices that had kept retirement timing in line seems clearly to be unraveling.

Second, the labor market itself is undergoing a period of fundamental transformation. During the past 15 years, in particular, many companies have sought to move away from the traditional model of mutual obligation, the "implicit contract," between employees and employers (Kalleberg, Knoke, and Marsden 1995; Osterman 1988). In the 1980s, for example, about 40% of the U.S. firms with more than 1,000 employees reduced their workforce through special early retirement incentives (Henretta and Lee 1996; Hardy, Hazelrigg, and Quadagno 1996; Guillemard and Rein 1993). Changes in the industrial structure at the aggregate level (such as the shift from manufacturing to service industries) have also affected the workforce (Jacobs, Kohli, and Rein 1991; DeViney and O'Rand 1988; Pampel and Weise 1983; cf. Sørensen and Tuma 1981). These economic transformations have made both employment more uncertain and retirement timing less predictable.

Third, we are witnessing a remarkable shift in the demographic base of the pool of actual and potential workers. Substantial improvement in life expectancy has lengthened the life span, suggesting the potential for extending employment to later ages (Settersten and Mayer 1997; George 1993; Tuma and Sandefur 1988). Age stereotypes regarding health, work performance, and productivity have also been significantly revised, and many people do indeed continue to work into later years or seek employment in some capacity following retirement from their "career" jobs (Kohli and Rein 1991; Maddox 1987). These developments have contributed to an expansion in the plausible range of retirement age.

All three of these changes have no doubt been crucial in bringing about the unfastening of what had come to be a "normative" retirement regime. The fact that these macrolevel transformations have been neither neatly coordinated nor closely synchronized adds yet another layer of variability in the deinstitutionalization of the retirement transition (Riley and Riley 1994; Kohli and Rein 1991).

These arguments are essentially based on structural and situational imperatives, where contextual changes lead to behavioral changes. Consider, however, the following evidence. First, it has been shown that financial incentives for early exit do not affect all social groups alike (e.g., Hardy et al. 1996; Guillemard and Rein 1993; Campbell and O'Rand 1988). Second, a series of analyses by Quinn and Burkhauser (1994) demonstrate that the impact of mandated retirement ages was much less than had been supposed (Quinn, Burkhauser, and Myers 1990, pp. 77–87). What these findings suggest is that contextual changes are necessary but not sufficient to account for life course institutionalization and deinstitutionalization.

Public policies, economic circumstances, and demographic profiles establish parameters, setting certain ground rules and stipulating available options. Yet how they actually translate into particular outcomes is an issue for further theoretical articulation and empirical research.

We propose two additional dimensions—"social heterogeneity" and "biographical pacing"—and incorporate them into our model of retirement timing. First, social heterogeneity refers to the fact that the impacts of societal changes are not uniformly distributed across the whole population. Foremost among the bases of such heterogeneity are the differences between men and women, which have been extensively documented (Moen 1996*a*, 1996*b*; Henretta, O'Rand, and Chan 1993; Kohli and Rein 1991; DeViney and O'Rand 1988; Pampel and Park 1986; Henretta and O'Rand 1983; Streib and Schneider 1971).[2] These differences reflect the gendered opportunity structure as well as variations by gender in expectations and preferences. The process of choosing "the right time to retire" has much to do with reference group dynamics. Individuals' frames of comparison are not typically based on the experiences of a random sampling of other people or an averaging of overall population (Hardy et al. 1996). Rather, comparisons tend to be contextual. Gender provides one of the most salient—easy and clear—comparative frames, inducing homogeneity within gender and fostering distinctive norms between men and women. Yet the structural and cultural contexts of comparison are themselves in flux. For example, while women's work history has historically been characterized by tangential and transient ties to employment, their labor force participation rate has continually increased, and the gap between men's and women's workforce experience has been steadily closing (Tomaskovic-Devey 1993; Guillemard and Rein 1993; Moen 1985; Waite 1981).

The second dimension we incorporate is biographical pacing. Explanations based exclusively on exogenous factors ignore the fact that life course transitions are a product of individual action as well as institutional and historical forces. As social regulation weakened, the tension between "biography" and "history" (Campbell and O'Rand 1988; also see George 1993; Mayer and Tuma 1990; Mayer and Schoepflin 1989; Barley 1989; Dannefer 1988; Elder 1985) has increasingly come to the fore. In other words, the loosening of institutionalized retirement regime was coupled with increased voluntarism and individuation, rendering the endogenous, subjective aspect of life course processes more salient (cf. Modell 1989; Mayer 1986). More concretely, on the one hand, the range of possible choices in retirement timing decisions has considerably broadened due to

[2] Age and cohort differences have also been noted in previous research (e.g., Henretta and Lee 1996; Hogan and Astone 1986).

the macrolevel transformations discussed above. On the other hand, in tandem with and because of this changing landscape of constraint and opportunity, more and more workers have begun to leave under terms of their own choice and at their own pace. To date, this aspect of choice within constraint is the least articulated in the retirement research literature.

TIMING RETIREMENT ON MULTIPLE CLOCKS: THE MODEL

To sum up, the retirement regime is being reorganized, if not undone.[3] This reorganization presents "perhaps the most explicit challenge" for life course theory, not only as an explanatory task but also as a theoretical window on the construction of the life course in general and the articulation of endogenous and exogenous factors underlying the life course in particular (Guillemard and Rein 1993, p. 1). Dannefer's (1988, p. 374) call for theoretical language describing the phenomenon as a systematically stratified and differentiated process is, thus, an apt and timely one. The idea that life course transitions and trajectories are subject to more than one temporal dimension is not new. Previous research has suggested that tempo and scheduling of life course in general, and retirement timing in particular, are shaped by multiple factors and alignment between them (Mayer and Schoepflin 1989; Featherman 1986; Campbell and O'Rand 1988). This research called for a "multilevel and multitime framework" (Mayer and Tuma 1990, pp. 6–7; Elder 1985; see, e.g., Petersen and Spilerman 1990). What we question is the validity of a presumption—frequently, though implicitly, made in the past—that various temporal dimensions are operating in tandem, producing a high degree of social regulation in life course transitions (Mayer 1986).

Recent changes in the transition to retirement provide us with a strategic site to probe into the multiplex nature of temporality associated with life course institutionalization and deinstitutionalization. The retirement decision is for most workers primarily a timing problem, that is, they are trying to pick "the best time to retire" (Hardy et al. 1996). That decision, however, is both biographically embedded and historically conditioned. It is also, as noted earlier, becoming quite heterogeneous (Campbell and

[3] The deinstitutionalization of the retirement regime is evident not only in timing but also in the form of retirement. Alternatives to the traditional, i.e., clearly demarcated, determinate, orderly, absorbing, definitive, and "crisp," form of retirement have multiplied. As a result, it has become more variable, diffuse, imprecise, and contingent (Mutchler et al. 1997; O'Rand 1996; Elder and O'Rand 1995; Guillemard and Rein 1993; Henretta 1992). The notion of retirement as an all-or-nothing dichotomy is no longer adequate, and reconceptualizing it as a process instead of an event has already been suggested in previous research (Atchley 1982).

O'Rand 1988). These constitute the three major temporal dimensions we observe in retirement: (historical) context, (social) heterogeneity, and (biographical) pacing.

First, we have described the way macrolevel environment—mainly the state and the labor market—and historical circumstances set aggregate baseline parameters around retirement transition. These are external influences, consisting of long-term trends and random fluctuations. We call this "historical context." Second, individuals as purposive actors make the decision to retire. On the one hand, courses of action around retirement can be volitional and internal. Yet, on the other hand, they are bound by cumulative contingencies. That is, there is a narrative logic in one's career that can go on its own momentum, setting its own pace. The product of this tension is what we call "biographical pacing." Finally, between these two are social groupings, such as gender, where we typically locate normative expectations (Henretta 1992; O'Rand 1996; Elder and O'Rand 1995). We call this "social heterogeneity." Note, however, that this is not an independent temporal dimension per se. Rather it constitutes a major source of variation, since the ways in which historical context and biographical pacing operate differ across social boundaries such as gender.

Pacing Life Course Transition: Career Pathways and Retirement

Among the three temporal dimensions in our model, biographical pacing has been the most neglected in previous research. The concept is based on a central tenet of the life course perspective: to understand behavior at any one life stage requires knowledge of prior transitions and trajectories (Elder 1992, 1995; O'Rand and Henretta 1982; cf. Hughes [1937] 1994). Transitions are always embedded in the trajectories that give them distinctive forms and meanings (Elder 1995). Retirement, therefore, should be viewed as a transition occurring within the context of overall career trajectory, reflecting biographical pacing, which affects the timing of this key transition.

Career pathways are typically thought of as a shorthand for occupational mobility. Yet they can be conceptualized and operationalized in a variety of ways (Breiger 1995; Rosenfeld 1992).[4] First, career pathways may differ in terms of level of overall mobility. Taking career pathways to be series of positions, one may expect an orderly and hierarchical progression of jobs (Wilensky 1961) or individual achievement (Spenner, Otto, and Call 1982) to be the norm. The extent and shape of deviation

[4] We employ the term "career" neutrally with respect to orderliness and disorderliness of work history as in Spilerman (1977).

from this norm are of crucial importance, however, and need to be examined empirically (e.g., Rosenbaum 1984; Spilerman 1977). Variations in career pathways can be expected to affect other behaviors, such as retirement. For instance, one would anticipate that those having experienced uneven, or downward, career pathways to be less likely to plan for retirement and more likely to have greater variation in their retirement timing.

Second, career pathways may similarly vary in terms of their relative continuity in employment. For instance, workers who have frequently moved in and out of the labor force, in and out of employment, or in and out of jobs in many firms, may be less invested in their careers and less attached to the labor force (Wilensky 1961), viewing early retirement incentives and possibilities as a relief, a means of formally exiting what have been erratic, disrupted careers (Moen 1996*b*). Also germane is the importance of timing. For instance, workers in their sixties who had planned on retiring anyway should be less likely to view being laid off due to downsizing as unfinished business, and consequently less likely to seek subsequent employment. By contrast, workers in their early fifties may view the same event quite differently.

In sum, various characteristics of career pathways, we argue, bear upon the behaviors before, around, and after the retirement. We focus, empirically, on the labor force experiences of retired men and women, identifying and describing their career pathways to retirement. Taking into consideration overall pattern of trajectory as well as important transitions within it, we investigate whether and how these experiences influence various aspects of retirement.

Our model depicts retirement as a set of behaviors temporally patterned on the three proposed dimensions. It is hypothesized to be timed on three separate clocks, all ticking simultaneously yet to different beats (Mayer and Tuma 1990; Dannefer 1988). Note that we specify retirement as a set of behavioral variables, permitting us to examine various aspects and stages that constitute retirement, from retirement planning to postretirement employment. In other words, retirement is seen as a process, rather than a one-time, one-way exit from the labor force. (See n. 3, above, for further discussion.)

The model generates a number of novel research questions. Do these three factors—historical context, gender difference, and career pathway—exert separate, additive influences on planning and timing of retirement and postretirement employment? Or do they interact with one another? Do these effects operate in the same direction? Is any one temporal dimension primary in timing retirement? Do these clocks operate consistently across various behavioral aspects of retirement? Do any of them operate at cross-purposes? Focusing on intertemporal patterning of life course, we address these questions in the following analysis.

DATA AND MEASURES

Data

We analyze data collected in the first wave of the Cornell Retirement and Well-Being Study (CRWB). The respondents are 304 older workers and 458 retirees from six large manufacturing and service companies of four cities in upstate New York who were ages 50–72 at the time they were interviewed in 1994–95. Note that these six companies, from which we collected our data, do not represent the broad spectrum of all companies in the United States. Rather, they belong to the upper tier of the spectrum. Two of them are among Fortune 500 companies and the other four are the largest in the state in their respective industries. One might, hence, consider that our respondents are largely representative of those who have experienced the best of circumstances in their career and in their retirement. Yet, these are also the companies that spearheaded drastic restructuring and downsizing in the 1980s and 1990s. Respondents were randomly selected from the lists provided by their employers and initially contacted by letter and telephone to request their participation and arrange for an interview.[5] The interviews, ranging from one to two and a half hours, were conducted face to face, save for those who had relocated to new communities, which were conducted by telephone.

The principal survey instruments include a structured interview schedule and a booklet of self-administered questions drawn from a number of sources, including the Health and Retirement Survey (Juster 1992) and the Quality of Employment Survey (Quinn and Staines 1979). These instruments were extensively pretested prior to administration. Of special interest to us is the respondents' employment history, which we draw from the collection of detailed life history data.

In the analysis that follows, we use data only on the retiree subsample. There are 212 women (46%) and 246 men (54%), with an average age of 63 years, who have spent anywhere from one month to more than 19 years in retirement. Most retired around 1990. Because retirement is increasingly distinct from a permanent exit from the workforce, we operationalize being "retired" as receiving a pension (or retirement package) from one of the six companies.[6] Respondents had been last employed in a wide

[5] The overall response rate was 78% among those contacted.

[6] Note that this is not the only way to define retirement status. Parnes and Less (1985; Parnes and Nestel 1981) have examined three alternative operational criteria of retirement—(1) subjective: individual's own perception of having stopped working at a regular job; (2) income: receipt of Social Security or other pension income; and (3) participation: partial or complete withdrawal from the labor market (e.g., working less than 1,000 hours during the year)—and found that retirement status of four-fifths of the men could be defined unambiguously. Such a definition depends also on whether

range of preretirement jobs spanning much of occupational hierarchy. To account for the possible biases in selecting only the retirees from the initial sample ("incidental truncation"), and to ensure consistent estimates, we adopt Heckman's (1979; see also Greene 1993; Winship and Mare 1992) two-equation model and correct for selection bias in the model estimation.

Dependent Variables: Multiple Measures of Retirement

In addition to the age respondents retired, we gathered data on a set of four variables that are pertinent to retirement timing. Two of them have to do with various aspects of the retirement age norm: age they began planning retirement and age they expected to retire, or their target retirement age. We also have information on whether the respondent had taken an early retirement incentive (ERI), which directly affects retirement timing. Finally, we examine respondents' postretirement employment, which could be linked to their retirement planning, expectations, and timing (cf. Ekerdt and DeViney 1993). Each of these multiple measures bears on various aspects and stages of retirement, allowing us to examine the composite and processual nature of retirement.

Explanatory Variables

Based on historical events and the ways in which these respondents collectively experienced them (Elder and Pavalko 1993; Burt 1991; Hogan 1978; Ryder 1965), we delineate three cohorts to capture historical context: (1) born before 1929, (2) born between 1929 and 1934, and (3) born after 1934. By the time of interview (1994–95), they were (1) over 66 years of age, (2) 60–65, and (3) less than 60 years of age, respectively. Benchmark events in their life course are the Great Depression at one end and massive corporate restructuring in the late 1980s and early 1990s at the other. The latter, in particular, bears on the changing opportunity structure, which could have affected these three cohorts differentially given that they were at different life, and career, stages in the late 1980s and early 1990s (Kalleberg et al. 1995; Kotter 1995; Kanter 1989; Osterman 1988). By 1985, the onset of massive corporate downsizing, they were at ages 56 and over, 50–55, and under 50, respectively (see table 6, below).

The main locus of social heterogeneity we consider is gender. We have oversampled women to balance the data in terms of gender, making possi-

"retirement" is conceived as an event (i.e., "once retired, always retired") or a current status (i.e., "What is the individual doing in a particular year?"; see also Atchley [1982]).

ble statistically reliable estimates of gender differences. Note that, since our respondents are from the six companies mentioned above, the data represent only the experiences of men and women who had been employed and retired. What our findings show, hence, might be closer to the national average picture for men but might be rather skewed for women in the general population (in that only those women who had been employed and retired are included in our sample, while those who had been exclusively full-time homemakers, for instance, are not).

To address whether or not, as well as how, retirement timing is influenced by prior work experiences—what we call biographical pacing—first requires definition and measurement of those experiences. Through an examination of the life history data detailing various aspects of career transitions and trajectories over the life course leading to retirement, we chart a set of typical career pathways for retired men and women. We discuss the theoretical issues and operational details involved in the next section.

Two main control variables pertain to the respondents' human capital, education (years of schooling completed), and tenure (years in the organization retired from) (Becker [1964] 1993; Mitchell and Fields 1982; Mincer 1974). The latter also serves as a rough proxy for eligibility and amount of pension, thus, at least indirectly, taking into account the financial aspects of retirement timing (Hardy et al. 1996; Guillemard and Rein 1993, p. 479). The selection bias estimate (λ) is obtained from a probit regression model (Greene 1993), as shown in table A1 in the appendix, based on gender, cohort, and two main control variables: education and tenure. Dummy variables for the companies the respondents are selected from are also included in the model. The selection bias is controlled for in all estimations reported below. A few additional variables related to the circumstances around retirement are included in estimations of the likelihood of postretirement employment, which will be discussed later.

CHARTING CAREER PATHWAYS

To chart the regular patterns in employment history, we employ a sequence analysis technique known as "optimal matching" or "optimal alignment." It is a new method for old ideas; sequences of events or phenomena have been a concern of a wide variety of research in social sciences (Abbott 1995*a*). Life course researchers, in particular, have been interested in this issue over the past two decades, for it is at the core of life course perspective's two key constructs—trajectories and transitions—both conceptually and methodologically (Pavalko 1995). However, the methods developed and used thus far have mostly focused on individual events, not the sequence as a whole, that is, sequence qua sequence.

Event history analysis is a typical case in point, where individual spells are the unit of analysis, with transitions between spells the events of interest (Tuma and Hannan 1984). By contrast, we consider each respondent's whole sequence, examining the overall patterning of career trajectories. Specifically, we take into account the incidence, timing, and duration of diverse events, and their sequence across multiple domains of career (cf. Pavalko, Elder, and Clipp 1993; Rindfuss et al. 1987; Rosenbaum 1984; Hogan 1978; Wilensky 1961).

The data on employment histories of retirees provide information on transitions and trajectories over the life course in occupation, work status, and organization from age 30 until retirement. Occupation was coded with a nominal coding scheme used in the CRWB study ($k = 64$; see table A2 in the appendix). Work status was coded into 5 categories (employed full time, part time, alternating between the two, sporadic/seasonal, and not employed). And, last, organization was coded by counting the number of companies or employers the respondent has worked for up to age t. Among the retirees, reconstruction of complete employment histories was possible for 401 cases.[7] Using yearly interval as unit-time, the data were transformed into sequence data format, that is, strings of codes. Presented in figure 1 is an example of a typical female retiree, Katie. Having been out of the labor force for a long time (work status = 5, occupation = 64, organization = 0), Katie started working full-time at age 37, preparing and serving food (1, 42, 1). After three years, at age 40, she moved to another company to work, again full-time, as a machine operator (1, 60, 2), from which she retired after 19 years of continuous employment. This serves as an illustration of strings that contain information on incidence, timing, duration, and sequence for each of the three intersecting dimensions of employment history.

Based on the interelement distance matrices, specifying pairwise distance between codes (see tables A3 and A4 in the appendix), the optimal matching algorithm produces measures of dissimilarity between these sequences.[8] Three dissimilarity matrices—occupations, organizations, and

[7] With regard to the baseline variables (refer to table A1 in the appendix), there were no significant differences between those who were retained (87.6%) and those who were not (12.4%).

[8] See Abbott and Hrycak (1990) for an extended introduction to this technique, and Abbott and Barman (1997); Stovel, Savage, and Bearman (1996); Blair-Loy (1999); and Chan (1995) for its recent application in substantive areas. For optimal matching of sequences for this analysis, we used an adapted version of DISTANCE by Stovel (1996) written in SAS/IML. It is based on the same algorithm described in Abbott and Hrycak (1990). It allows, however, one to analyze data with larger N (> 150; cf. Abbott 1995*b*).

Age (t):	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Occupation:	64	64	64	64	64	64	64	42	42	42	60	60	60	60	60	60
Organization:	0	0	0	0	0	0	0	1	1	1	2	2	2	2	2	2
Work Status:	5	5	5	5	5	5	5	1	1	1	1	1	1	1	1	1

Age (t):	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	...
Occupation:	60	60	60	60	60	60	60	60	60	60	60	60	60	*R*	.	...
Organization:	2	2	2	2	2	2	2	2	2	2	2	2	2	*R*	.	...
Work Status:	1	1	1	1	1	1	1	1	1	1	1	1	1	*R*	.	...

FIG. 1.—Sequence data: an example. For occupational category code, 64 = not employed (unemployed/out of labor force); 42 = food preparation and service; 60 = machine operators, assemblers, and inspectors. For more details, see table A2 in the appendix. Organization indicates N of companies worked for from age 30 to age t. Work status category code, 1 = full-time; 5 = not employed (unemployed/out of labor force). R denotes retirement.

work status—are then normalized and combined to form one overall matrix.[9] Hierarchical clustering is performed on this combined dissimilarity matrix to identify a set of typical pathways that simultaneously takes into account all three dimensions. This process of identifying typical career pathways is analogous to that of using "structural equivalence" as a basis of grouping actors in network analysis (Burt 1983; White, Boorman, and

[9] In handling multiple dimensions, our strategy is slightly different from that employed by Abbott and Hrycak (1990), Blair-Loy (1999), and Stovel et al. (1996). Whereas they start with one string combining information on all dimensions, we combine the dimensions later. Nonetheless, both obtain distances additively, thus are equivalent to each other. As the number of dimensions increases and as the number of "elements" increases for each dimension, however, the former strategy becomes quickly unwieldy. With our data, for instance, we could have defined 3,520 elements (5 for work status × 11 for organization × 64 for occupation), and our full substitution cost matrix might have been 3,520-by-3,520. We have, instead, opted for the second strategy, which is much more manageable.

TABLE 1

ANOVA on Pairwise Distances within- and between-Clusters

	N	Number of Pairs*	Mean Distance	SD of Distance	*P* of Difference†
Within-cluster pairs:‡					
Cluster 1	46	1,035	.361	.089	<.001
Cluster 2	154	11,781	.409	.095	<.001
Cluster 3	160	12,720	.468	.093	<.001
Cluster 4	10	45	.516	.086	.116
Cluster 5	21	210	.375	.122	<.001
All *within*-cluster pairs§	391‖	25,791	.436	.100	<.001
All *between*-cluster pairs		50,454	.539	.100	
All pairs		76,245	.504	.111	

* Number of pairs is obtained by $N(N - 1)/2$.

† Significance based on the least significance difference (LSD) pairwise multiple comparison test.

‡ With all between-cluster pairs, $F_{(5,76239)} = 4340.0$, $P < .001$, $\eta^2 = .222$.

§ With all between-cluster pairs, $F_{(1,76243)} = 18027.6$, $P < .001$, $\eta^2 = .191$.

‖ Excludes 10 cases not clustered into the five clusters. With those 10 cases included, virtually identical results are obtained, $F_{(7,80192)} = 3385.2$, $P < .001$, $\eta^2 = .228$; $F_{(1,80198)} = 20081.7$, $P < .001$, $\eta^2 = .200$.

Breiger 1976). In other words, the career pathways clustered together into a type are "sequentially equivalent" to one another. We discerned in the data five distinct clusters, based on the criteria of *F*-ratios and other tests as shown in table 1.[10] We call these "career pathway types," or "pathway types" for short. They are labeled as "delayed entry pathway" (cluster 1), "orderly pathway" (cluster 2), "high-geared pathway" (cluster 3), "steady part-time pathway" (cluster 4), and "intermittent pathway" (cluster 5), respectively, for easy identification and reference. The labels describe major characteristics observed in each type (cf. Moen 1985; O'Rand and Henretta 1982).

Five Pathway Types

In the first column of figure 2, we illustrate how the respondents have experienced their careers in terms of occupational status and mobility by assigning a socioeconomic index (SEI) score to each occupational category (Nakao and Treas 1994). The vertical coordinate indicates occupational

[10] The solution we adopted here is based on an initial solution with seven clusters. Two of the clusters, however, are dropped from the analyses reported below due to the small *N*s (seven and three), leaving five clusters.

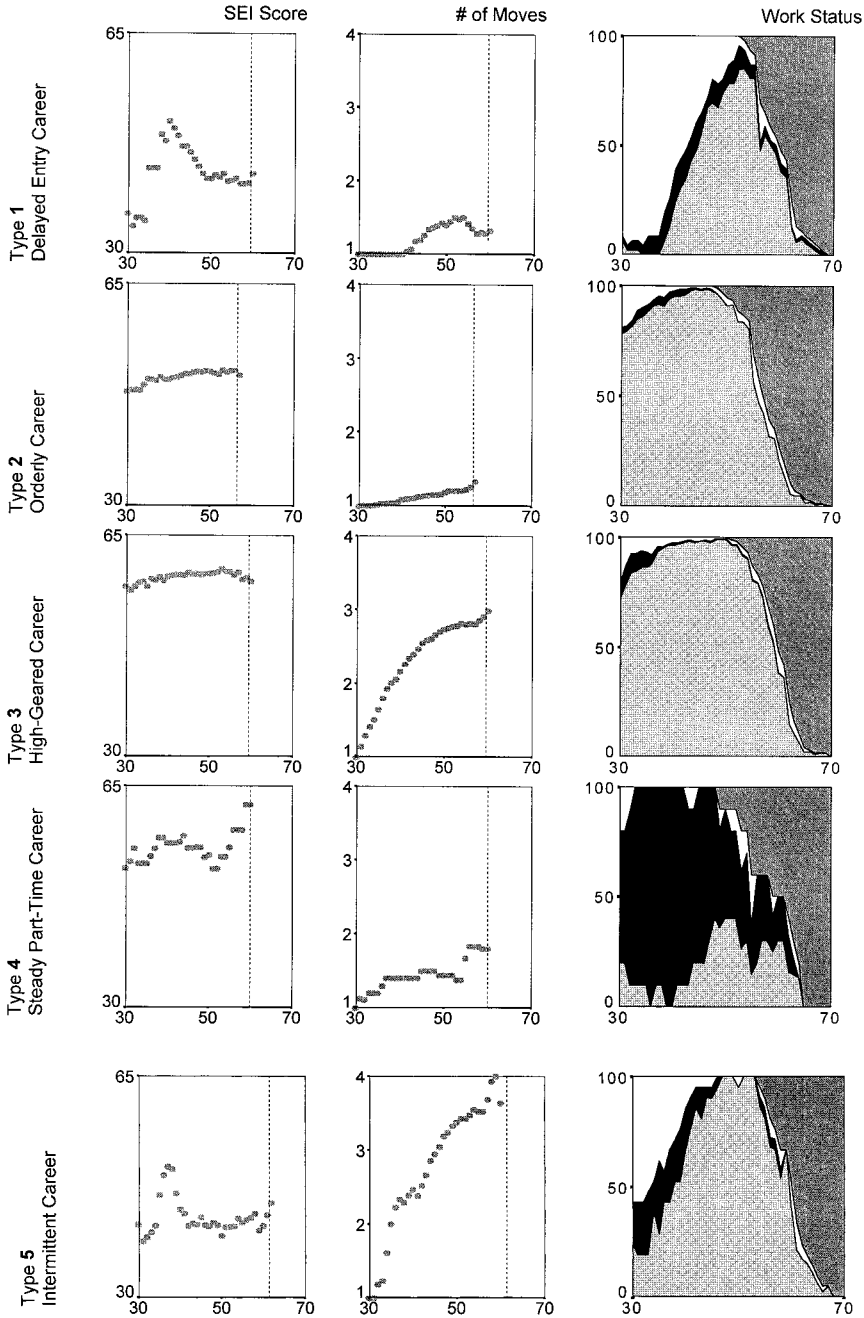

FIG. 2.—Age profiles for career pathway types. The dashed vertical lines indicate the median retirement age of respondents in each pathway type. For "SEI Score," average assigned score is used (see table A2). "# of Moves" indicates the average number of companies or employers worked for up to the age indicated on the horizontal axis. For "Work Status," the white area represents the proportion of respondents unemployed or out of the labor force; the light grey area, those employed full-time; the black area, those employed part-time; the dark gray area, those retired.

prestige in SEI score, and the horizontal coordinate indicates age. The dots represent the average SEI score across age.[11] The dashed vertical line indicates the age where half of the respondents in each pathway type have retired (i.e., median retirement age). In terms of average SEI scores, high-geared pathway type—consisting mostly of those in executive and managerial positions—is the highest, while delayed entry and intermittent types—primarily made up of those in clerical positions—are the lowest (see table 2 for more details). In terms of change and status mobility, the contrast is between orderly and high-geared pathway types and those of delayed entry, steady part-time, and intermittent types. While the former show a steady and continuous upward mobility, the latter reflect quite a bit of fluctuation.

The second column of figure 2 shows how the respondents have moved between companies or employers. The vertical coordinate indicates average number of companies or employers worked for up to that age. With respect to interorganizational mobility, the basic contrast is between high-geared and intermittent pathway types, "movers," and those of delayed entry, orderly, and steady part-time types, "stayers." There is a subtle, yet important, difference among the movers, however. For the high-geared pathway type, mobility continues until the midforties, then tapers off afterward. For the intermittent type, by contrast, mobility remains high until retirement.

Respondents' trajectories with respect to their work status over time are shown in the last column. (See table 2 for the average amount of time spent in each status over the entire period.) The white area represents proportion of respondents unemployed or out of the labor force, the light gray area those employed full time, the black area those employed part time, and the dark gray area those retired. There are three distinct groups based on work status profile over the life course: full-time group for orderly and high-geared pathway types, part-time group for steady part-time types, and another group consisting of delayed entry and intermittent types. The last group has an extended period of being out of the labor force early on, suggesting that these respondents start their work careers late. This group also shows a significant presence of part-timers.

Overlaying the three columns of graphs on top of one another permits more elaborate descriptions. The high levels of interorganizational mobility found in high-geared and intermittent pathway types turn out to be based on two entirely different dynamics. For the former, changing jobs across organizations seems to be a way of achieving upward mobility,

[11] The score is assigned by mapping the 1990 census three-digit codes onto the occupational categories we use as shown in table A2 in the appendix. Average SEI scores are calculated only for those who are employed at the time.

TABLE 2

FIVE PATHWAY TYPES AND THEIR CHARACTERISTICS

	Delayed Entry Career (1)	Orderly Career (2)	High-Geared Career (3)	Steady Part-Time Career (4)	Intermittent Career (5)
N	46	154	160	10	21
Gender composition:					
(% men)	.0	64.9	61.9	30.0	.0
(% women)	100.0	35.1	38.1	70.0	100.0
Education (mean/years)	12.64	13.25	14.61	13.40	12.86
SEI (mean)	42.8	50.3	58.5	54.6	42.5
No. of organizations (mean)	1.5	1.2	2.8	1.7	3.7
Work status:					
Full-time (%)	47.4	94.6	94.4	26.2	73.7
Part-time (%)	9.3	1.5	2.3	69.6	10.6
Unemployed/OLF (%)	43.4	3.9	3.3	4.2	15.7

NOTE.—For each work status, percentages are obtained by [(person-years in that work status)/(total person-years)] × 100. The differences among the five pathway types in terms of the criterion variables are tested. For gender composition, likelihood-ratio (L^2) test is used, and for the others, F-test is used. The tests are significant at $P < .001$.

while for the latter, job shifts across organizations are merely an indication of instability, reflecting frequent exits and reentries. The comparison between orderly and high-geared pathway types provides another intriguing case. Both experience upward mobility, but that of the orderly type seems to be based on "ladder climbing" in the same firm, that is, moving up through the internal labor market. This is more or less what the "ideal" type of employment history, as constructed in the Unite States during the 1950s, 1960s, and 1970s, would look like, that is, continuous employment in a single organization for the entire span of a career (Wilensky 1961). By contrast, the mobility pattern captured in the high-geared pathway type seems to be based on "ladder hopping" (Kanter 1989; Kotter 1995).

Examining characteristics of respondents sorted into the five pathway types makes their distinctiveness more apparent. Gender is a crucial factor that we expect to shape many aspects of career pathways. Almost all the men are found either in orderly or high-geared pathway types. While these two are predominantly male, there is a significant presence of women as well (35.1% and 38.1%, respectively). Delayed entry and intermittent career pathway types consist exclusively of women, while the steady part-time type is predominantly composed of women (see table 2). In short, we observe two patterns in our data. First, on average, there seem to be distinct and separate career pathways for men and women ($L^2_{(4)} = 117.159$; $P = .000$). Yet, second, working women seem to have traveled quite diverse paths, whereas men's career paths tend to be much more standardized, falling primarily into a couple of career pathway types.[12]

One puzzling issue noted in reading figure 2 can be resolved with this information on gender composition. On the one hand, the peak in SEI score for delayed entry type occurs around age 40, when only a small proportion of the respondents in that pathway type are employed full time. On the other hand, a massive influx into the labor force takes place right after that point, which is accompanied by a rapid decline in SEI score. Intermittent type shows a similar pattern, with slightly different timing. The common thread between these two pathway types is their gender

[12] Also note that, on the one hand, we find that women's work patterns have increasingly taken on the appearance of men's—i.e., full-time permanent attachment—as seen in the sizable presence of women in orderly and high-geared career pathway types (Masnick and Bane 1980; Kreps and Clark 1975; Waite 1981; Moen 1985). On the other hand, there is also evidence that men—some, at least—have been experiencing changes in the social organization of work and family of the last several decades by taking on the patterns that used to be associated with women's careers, as shown in the steady part-time type. Both illustrate that the issue of gendered careers cannot be addressed simply by contrasting stylized men's vs. women's career paths. Rather, one needs to have a more refined perspective on the differentiation between as well as among men and women within particular historical contexts.

composition, that is, they both consist exclusively of women. Most women in both pathway types are not employed in their thirties because they are spending full time having and raising their children; but they return to paid work in their forties. However, they return to jobs with little prospect of upward mobility.

Level of schooling is, also as expected, related to the manner in which respondents are sorted into various career pathway types (see table 2). This is partly due to the confounding of gender and education effects: men are, on the whole, more educated than women in this sample, as in the general population of this age group. Yet, even after controlling for gender (not shown), the five types show substantial differences in average level of education. Those in the high-geared career pathway type are the most highly educated, followed by orderly and steady part-time types. Delayed entry and intermittent pathway types are traveled mostly by high school graduates, whereas high-geared type is a path common to college graduates. Among women, those following high-geared paths are the most educated; there is little difference in education among women in the other four types.

In sum, the orderly pathway type seems to represent what has been thought to be the "ideal" career path, that is, stable, continuous, and upwardly mobile. Those on the delayed entry pathway type, exclusively women, enter the workforce after their childbearing years. Although they work typically at low SEI jobs, these jobs are relatively stable. The high-geared type characterizes the experience of those who are highly educated and upwardly mobile. They start off high on the occupational ladder and move about quite a bit. The steady part-time career pathway type consists of a small group of people working mostly part time. Yet they show low levels of interorganizational mobility and are relatively successful in terms of SEI score and upward mobility. The intermittent pathway type consists exclusively of women and is the least stable of all. Although it shares many of the characteristics of the delayed entry type, it distinguishes itself by a trajectory of higher mobility across organizations, mostly due to frequent exits and reentries.

ANALYSIS AND FINDINGS

In this section, we test multivariate models of retirement timing. We investigate not only the effects of the three dimensions—historical context, social heterogeneity, and biographical pacing—but also the changing patterns of those effects across the five dependent variables characterizing the retirement transition. We address the following questions: Do respondents differ in how and when they retire according to the historical contexts in which they made the retirement decision? Does gender shape the ways in

which respondents end their working careers? Do respondents traveling varying career pathways pace their retirement transition differently?

Retirement: Planning, Expecting, and Doing It

First, we find that respondents' age at retirement varies considerably, yet most retired in their late fifties and early sixties (median: 59; IQR: 56–62; see fig. 3). But are respondents retiring when they expected to? To address this issue we examine two variables. One deals with when they began planning their retirement, and the other specifically taps into target retirement age if they did plan. Note that these two are subject to retrospective biases. In addition to the recall problem, there is a possibility of consequence affirming rationalization, given that the respondents have already retired.[13] Nonetheless, responses to these two questions reflect underlying norms regarding retirement timing in this sample.

Although correlations between the three are quite substantial, especially between target and actual retirement ages, each varies distinctively, as shown in figure 3.[14] A few respondents report having begun planning their retirement very early, yet the pace begins to pick up in earnest around age 40, reaching a peak around 50. Some seem to have begun rather too late to really "plan ahead." Among the three variables, this is the one with the greatest dispersion, suggesting lack of strong normative consensus on when to begin planning for retirement. When they did plan, respondents report target retirement ages that are easily markable, such as 55 or 65. Target retirement age ranges from the late fifties to early sixties. Age 62 is the most frequent choice, obviously conditioned by the Social Security benefit eligibility requirement.

Table 3 shows, first, that men's timing is earlier than women's on all three measures, particularly in the age they began planning. This might be due to the fact that most women in our data entered the workforce later than men, that women are less likely than men to be able to afford retirement, or that women are less adequately socialized regarding the

[13] Research shows that the reliability of expectation as a predictor of actual retirement is related to the age at which the expectation is measured (Nestel 1985). For instance, men who are relatively young when asked their target retirement age report earlier ages, on the average, than older men.

[14] The correlation coefficients between the three are:

Age	Began Planning	Target
Began planning		
Target	.366 (P = .000)	
Actual	.388 (P = .000)	.683 (P = .000)

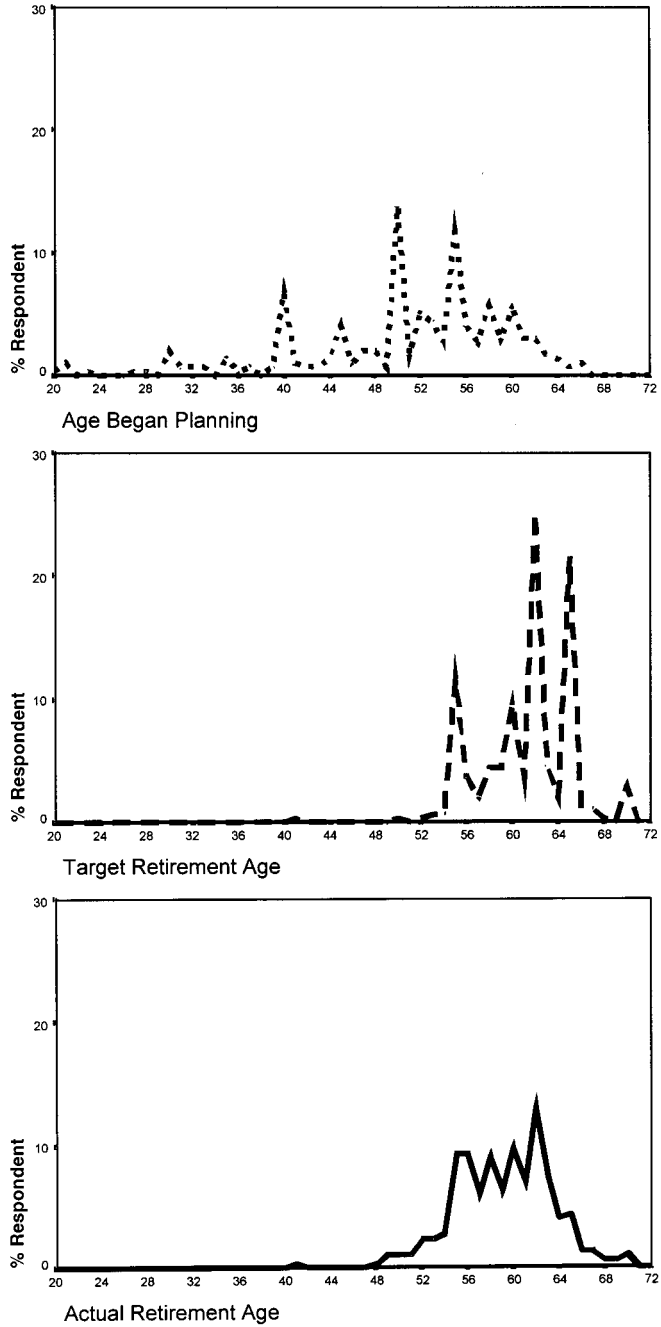

FIG. 3.—Timing retirement (CRWB study, wave 1 [1994–95]), $N = 458$

TABLE 3

TIME RETIREMENT BY COHORT, GENDER, AND PATHWAY TYPE

	Age Began Planning (1)	Age Expected to Retire (2)	Age Retired (3)	(3) − (2)
Gender:				
Men	48.54	60.84	58.72	−2.21
	(9.51)	(4.01)	(4.43)	(3.38)
Women	53.96	61.65	59.57	−2.19
	(7.52)	(3.89)	(3.88)	(3.05)
F-test	$P = .000$	$P = .043$	$P = .043$	$P = .947$
Cohort:				
1 (1923–28)	54.17	63.26	61.83	−1.57
	(8.92)	(3.40)	(3.55)	(2.86)
2 (1929–34)	50.22	60.70	58.96	−1.77
	(8.48)	(3.19)	(2.68)	(2.92)
3 (1935–43)	46.16	58.31	53.99	−4.34
	(8.28)	(4.32)	(2.84)	(3.63)
F-test	$P = .000$	$P = .000$	$P = .000$	$P = .000$
Pathway type:				
1 (delayed entry)	56.73	61.74	59.91	−2.00
	(4.81)	(3.51)	(3.92)	(2.49)
2 (orderly)	48.89	60.43	57.75	−2.81
	(9.31)	(4.06)	(4.15)	(3.69)
3 (high-geared)	50.80	61.77	60.17	−1.67
	(9.49)	(3.65)	(3.68)	(2.91)
4 (steady part-time)	57.60	60.50	59.00	−1.50
	(5.55)	(4.67)	(5.68)	(2.22)
5 (intermittent)	54.75	62.79	60.38	−2.53
	(4.81)	(2.92)	(3.67)	(3.13)
F-test	$P = .000$	$P = .008$	$P = .000$	$P = .034$
Total	50.90	61.23	59.13	−2.20
	(9.09)	(3.97)	(4.19)	(3.23)

NOTE.—Numbers are mean ages. SDs are in parentheses.

retirement transition. On average, men retired earlier than women by about a year. Note that women's retirement age is a lot more homogeneous than men's, which is also true for the other two measures. This is in contrast to the fact that women are more varied in terms of the career paths they have traversed. In other words, women seem to be more likely to abide by retirement age norms despite their varied career experiences. Second, the trend of increasingly early retirement is clear: Later cohorts began planning earlier, expected to retire earlier, and did retire earlier. Third, between the pathway types, those following the orderly path were

the earliest in planning, closely followed by those of the high-geared type. Their predictable career pathways seem to have allowed them the room to plan ahead, which the others did not enjoy. The orderly pathway types retired the earliest, while high-geared and intermittent types retired relatively late.[15]

There is, however, a substantial discrepancy between actual and target ages of retirement: respondents, on average, retired about two years earlier than they had expected to, which is consistent with other findings (see Nestel 1985; Barfield and Morgan 1969). This holds true across gender. As expected, the latest cohort shows the largest discrepancy, more than twice that of the other two. Those of the orderly type have the largest discrepancy between actual and target retirement ages, while high-geared and steady part-time pathway types show the smallest. This is perhaps the divide between the old and new types of careers (Kanter 1989; Kotter 1995).

Multivariate analysis.—First, we expect gender to play an important role in the planning, expectation, and reality of scheduling retirement, for the gendered nature of life course should also be noticeable in the transition into retirement. Second, norms governing retirement as well as the structural environment around it—including corporate restructuring and introduction of early retirement incentives—have been changing over time. We expect to find some evidence of this in cohort differences among respondents. Finally, we expect career pathway type, which effectively summarizes the biographical pacing of the whole of their working lives, to influence various aspects of the retirement process. This is a straightforward life course hypothesis. A set of dummy-coded variables was used, with the intermittent type as the reference category. In addition, we control for three variables. Educational level is included as a basic control for general human capital. Tenure at the firm from which they retired and from which they receive pension is included as well. This is presumably quite important, for women tend to have shorter tenures, which might affect their retirement timing decision. We also take into account the selection bias discussed earlier.

Table 4 shows that, overall, the results are clear and consistent across models and measures. With regard to cohort—our measure of historical context—the latest cohort shows significantly earlier timing in all three

[15] Steady part-time pathway type shows an interesting gender-pathway type interaction. Women following this path are outliers in that they retire significantly earlier than the others (≅ age 57). On the other hand, however, the men in this type are the ones who retire the latest (= age 64). Whereas men expected to retire late and actually did so, the few women in this type did the opposite. Note, however, that this is the road taken by only a very small number of respondents, seven women and three men.

TABLE 4

TIMING RETIREMENT: OLS ESTIMATES

	DEPENDENT VARIABLES					
	Age Began Planning		Age Expected to Retire		Age Retired	
INDEPENDENT VARIABLES	1	2	1	2	1	2
Gender[a] (men = 1)	−3.536**	6.385	−.199	5.712*	−.110	6.090**
	(1.165)	(9.374)	(.412)	(2.366)	(.352)	(2.032)
Cohort:[b]						
1 (1923–28)	3.588**	3.642**	2.672***	2.652***	2.792***	2.744***
	(1.141)	(1.150)	(.410)	(4.08)	(.348)	(.345)
3 (1935–43)	−3.875*	−3.742*	−2.590***	−2.524***	−3.838***	−3.758***
	(1.750)	(1.757)	(.635)	(.632)	(.546)	(.541)
Education (years)	−.309	−.296	−.065	−.065	.023	.016
	(.206)	(.207)	(.074)	(.074)	(.062)	(.062)
Tenure (years)	.077	.081	.020	.023	.028	.031
	(.058)	(.058)	(.020)	(.020)	(.017)	(.017)
Pathway type:[c]						
1 (delayed entry)	1.534	1.496	−1.557	−1.565	−1.349	−1.350
	(2.848)	(2.853)	(.959)	(.953)	(.791)	(.783)
2 (orderly)	−2.535	−2.345	−1.701	−1.732	−1.894*	−1.694*
	(2.770)	(2.881)	(.934)	(.962)	(.772)	(.793)

3 (high-geared)	−1.142	−1.233	−.959	−.783	−.605	−.642
	(2.666)	(2.767)	(.886)	(.913)	(.731)	(.752)
4 (steady part-time)	3.997	1.963	−2.807*	−4.601**	−1.995	−3.883**
	(4.460)	(4.856)	(1.369)	(1.533)	(1.159)	(1.298)
Gender × pathway type 2		−10.339		−5.946*		−6.628**
		(9.534)		(2.443)		(2.098)
Gender × pathway type 3		−9.868		−6.224*		−6.155**
		(9.539)		(2.428)		(2.085)
Selection bias (λ)	1.494	1.420	1.616	1.545	−1.508	−1.533
	(2.617)	(2.625)	(.961)	(.957)	(.821)	(.814)
Constant	55.582	55.366	61.952	61.956	59.750	59.819
R^2	.204	.207	.231	.245	.494	.507
Adjusted R^2	.175	.173	.210	.220	.480	.491
F-ratio	7.139***	6.030***	10.983***	9.815***	36.679***	32.048***
df	(10/279)	(12/277)	(10/365)	(12/363)	(10/376)	(12/374)

NOTE.—SEs are in parentheses.

[a] Women is the omitted category.

[b] Cohort 2 (1929–34) is the omitted category.

[c] Pathway type 5 (intermittent career) is the omitted category.

* $P \leq .05$.

** $P \leq .01$.

*** $P \leq .001$.

measures.[16] Holding other variables in the model constant, respondents in the latest cohort began to plan earlier; when they did, they expected to retire earlier; and, they did in fact retire earlier. The opposite is true of the earliest cohort. This might be due to shifting norms regarding retirement, or to the structural changes occurring in the workplace, or both, given that the former tends to reflect the latter. Note the substantial increase in the standard errors between cohorts 1 and 3 across all three measures. The norm, at least in a statistical sense, is clearly becoming looser and more diffuse over time.

Gender is significant in explaining when respondents began to plan for retirement, with men beginning to plan significantly earlier than women—by about three to four years, net of other variables. Career pathway type does not seem to discriminate significantly the timing of retirement planning. This suggests that planning may be more influenced by societal and group norms and constraints, rather than life course experience. However, it seems, albeit weakly, that those whose career pathways have been relatively smooth—the orderly and high-geared types—are more likely to begin planning early.

For both target and actual retirement ages, gender difference is contingent on career pathway type, and vice versa. On average, men are likely to retire earlier than women, and so are those following orderly and steady part-time career paths than the other three. In order to account for the contingent relationship between gender and work experience, we introduced two interaction terms between pathway type and gender into the model. We found the most substantial difference with regard to both target and actual retirement ages in men following the orderly career pathway type. They are most likely to expect to, and actually do, retire earlier. These men in traditional career paths seem to be key in the trending down of retirement age.

The omitted category, the intermittent career pathway type, was later than the others in both target and actual retirement ages, net of other variables in the model. This contrasts sharply with those experiencing delayed entry, another exclusively female pathway type. The main difference between the two is that women in the delayed entry pathway type maintained a rather stable career once they (re)entered the labor force, whereas women in the intermittent pathway type experienced a high degree of instability throughout, which seemed to affect their retirement timing as well.

Note that the model does a lot better in explaining actual timing of retirement (adjusted $R^2 = .480$ and .491) than target timing (adjusted R^2

[16] Given the truncated nature of our sample design, one might expect this to be the case for the actual age at retirement but not necessarily for the other two.

= .210 and .220) or timing of planning (adjusted R^2 = .175 and .173). The age respondents began planning is the least standardized of all three, as shown in figure 3 and table 3. In terms of target and actual retirement timing, target timing seems to be relatively more free from the constraints imposed by the factors we considered (cf. Barfield and Morgan 1969). In sum, we find all three of the factors we hypothesized—historical contexts, social heterogeneity, and biographical pacing—play significant but different roles in patterning the timing of various aspects of the retirement transition.

To Take or Not to Take: Early Retirement Incentive

One of the changes in recent years that has considerably affected the timing of retirement is the introduction of ERIs, which are special benefit packages, mainly financial, offered to employees to encourage their retirement (often in the context of massive downsizing). To take an ERI is to leave one's job—if not the labor force—earlier than one might have done without it. Indeed, on average, those in our sample who were offered and took an ERI retired at an earlier age than those who did not by about 3 years (57.5 vs. 60.1; $F_{(1,257)} = 25.041$; $P = .000$). We use the model developed in the preceding section to investigate how it operates.

Table 5 reports maximum-likelihood estimation of logistic regression models. Cohort, dummy coded by two binary variables, is the only variable that matters among the three factors we modeled. Holding other variables constant and correcting for selection bias, later cohorts are significantly more likely to have taken an ERI. This also reflects their having higher rates of being offered ERIs by the employers. The effect holds true for both men and women and for all pathway types. Much like a massive shock, the downsizing/restructuring of the late 1980s and early 1990s overrides the other two clocks by fiat. Consider figure 4, where the number of retirees is plotted by year they retired. Those who took an ERI (light gray) are stacked on top of those who did not (dark gray). The steady increase in the bottom area reflects what one might expect, that is, as respondents get older, more and more of them eventually reach the point where they decide to retire. But the top area does not follow such a gradual pattern, showing instead a sharp and abrupt pike for the period roughly between 1989 and 1992. This was a period of widespread adoption of ERI, when corporate restructuring and downsizing was at its peak in the companies in our sample as in others.

We reestimated the model of retirement age presented in table 4 separately for those who took an ERI and those who did not. The contrast between the two is striking. For those who did not take an ERI, the overall results are quite similar to what we reported in table 4. For those who

TABLE 5

TAKING AN EARLY RETIREMENT INCENTIVE (ERI): LOGISTIC REGRESSION ESTIMATES

	TOOK AN ERI? (Yes = 1)		
INDEPENDENT VARIABLES	1	2	3
Gender[a]	.597	.570	−4.338
	(.317)	(.365)	(12.733)
Cohort:[b]			
1 (1923–28)	−1.346*	−1.395*	−1.382*
	(.366)	(.374)	(.375)
3 (1935–43)	2.502*	2.613*	2.589*
	(.603)	(.651)	(.649)
Education (years)	.061	.048	.050
	(.060)	(.063)	(.063)
Tenure (years)	−.013	−.011	−.013
	(.016)	(.019)	(.019)
Pathway type:[c]			
1 (delayed entry)		−.034	−.032
		(.830)	(.829)
2 (orderly)		−.121	−.226
		(.802)	(.846)
3 (high-geared)		.046	.100
		(.760)	(.794)
4 (steady part-time)		−.635	−.027
		(1.290)	(1.324)
Gender × pathway type 2			5.092
			(12.744)
Gender × pathway type 3			4.839
			(12.742)
Selection bias (λ)	−3.990*	−4.370*	−4.349*
	(.938)	(1.005)	(1.000)
Constant	.104	.495	.483
−2LL	275.26	267.96	266.74
L^2	46.59	47.75	48.97
χ^2 (df)	250 (6)	240 (10)	238 (12)
p-value	.001	.001	.001

NOTE.—SEs are in parentheses.

[a] Women is the omitted category.

[b] Cohort 2 (1929–34) is the omitted category.

[c] Pathway type 5 (intermittent career) is the omitted category.

* $P < .001$.

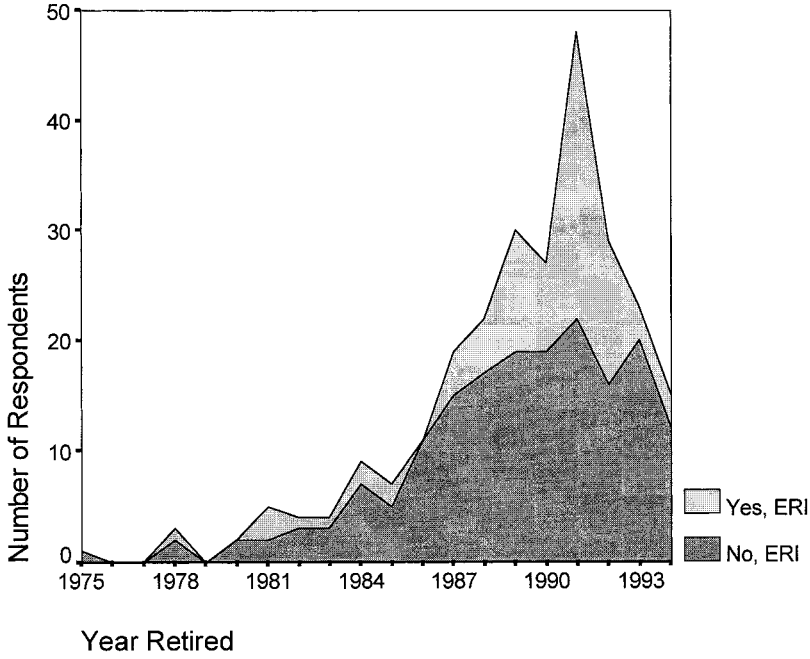

FIG. 4.—Number of respondents retired by year (CRWB, wave 1 [1994–95]) $N = 459$.

did, however, nothing but cohort turns out to be significant. Table 6 shows the age distribution for each cohort in 1989–92. Most of those who took an ERI come from cohorts 2 and 3, for the majority of cohort 1 had already retired by the time ERIs began to be offered widely. Among those who did take an ERI, it is either a matter of being the right age at the right time, if they took advantage of the changes in the opportunity structure, or being the wrong age at the wrong time, if they entered the transition prematurely because of the conditions they regarded as external and coercive.[17]

Postretirement (Re)Employment

Another part of the puzzle around the retirement transition is whether, how, and why retirees go back to paid work following retirement. Our

[17] One respondent boasted that he was going to retire anyway, viewing the ERI as a welcome windfall. Another felt it was either take the ERI or else be laid off, and was sorry to have to leave his job.

TABLE 6

AGE BY COHORT, 1989

	COHORT 1			COHORT 2			COHORT 3		
	Earliest	Median	Latest	Earliest	Median	Latest	Earliest	Median	Latest
Year born	1923	1926	1928	1929	1931	1934	1935	1937	1943
Age in 1989	66	63	61	60	58	55	54	52	46
Age in 1992	69	66	64	63	61	58	57	55	49

particular focus is on whether and how postretirement employment varies along, and is affected by, the temporal dimensions modeled to account for retirement timing. Table 7 shows the maximum-likelihood estimates of logistic regression models on the likelihood of ever taking on paid work following retirement. The first model is composed of the set of baseline variables used earlier. Unlike the results reported on the "timing" variables, human capital (i.e., education) has a large influence on postretirement employment. Specifically, respondents with higher levels of schooling are more likely to be reemployed. The odds for those with a college degree (16 years of schooling) going back to work following retirement is about twice ($1.723 = e^{16*.136}/e^{12*.136}$) that for those with only a high school degree (12 years). The delayed entry pathway type shows a significant negative effect, indicating that they are the least likely to reenter the workforce. Their relatively short, but stable, career seems to have a rather clear-cut ending. This is in sharp contrast with those in the intermittent type, another path followed exclusively by women. For this group of women, whose pathways are the most disorderly, retirement serves the demarcation function rather poorly, in the sense that they are highly likely to take on paid work again following retirement. They are more than three times ($3.300 = 1/e^{-1.194}$) more likely to do so than the delayed entry type, holding other variables constant. Given their career history, however, this postretirement employment might be just an extension of what has been an unstable work pattern.

In the second model, we add three variables to control for the effects of age and timing of interview. One might expect, for example, that those who retired in their seventies would be less likely to go back to work than those who retired in their fifties. It is also expected that those who have been in retirement longer would have been exposed to more opportunity to work again than recent retirees up to a point. The latter, which we specified as quadratic, was significant. In model 3, we introduce other variables that bear on the immediate circumstances around the retirement transition, the respondents' financial situation, and health condition at the time they retired. We expected that those who were well-prepared financially would be less likely to return to paid work, as would those who reported health problems as an important reason for retiring. We found strong support for the financial preparedness effect. The importance of poor health at the time of retirement in affecting postretirement employment differs by gender.[18] Among women, the odds of going back to work do not differ by whether or not health was a very important reason for retiring (odds ratio = .980). Among men, however, the likeli-

[18] Other gender interaction terms were examined but did not yield any significant result or change the overall pattern.

TABLE 7

POSTRETIREMENT EMPLOYMENT: LOGISTIC REGRESSION ESTIMATES

	HAVE WORKED SINCE RETIREMENT? (Yes = 1)			
INDEPENDENT VARIABLES	1	2	3	4
Gender[a] (men = 1)	.022	.116	.770	.881
	(.280)	(.291)	(.502)	(.520)
Cohort:[b]				
1 (≤1928)	.072	−.270	−.081	−.125
	(.276)	(.466)	(.289)	(.489)
3 (≥1935)	.087	.558	−.012	.122
	(.423)	(.615)	(.432)	(.636)
Education (years)	.136**	.138**	.149**	.142**
	(.048)	(.050)	(.053)	(.054)
Tenure (years)	−.022	−.022	−.021	−.021
	(.013)	(.014)	(.014)	(.014)
Pathway type:[c]				
1 (delayed entry)	−1.194*	−1.275*	−1.340*	−1.378*
	(.589)	(.604)	(.638)	(.654)
2 (orderly)	−.865	−.948	−.984	−1.032
	(.554)	(.574)	(.606)	(.623)
3 (high-geared)	−.973	−1.016	−1.086	−1.019
	(.522)	(.529)	(.576)	(.583)
4 (steady part-time)	−.192	−.374	−.219	−.376
	(.811)	(.834)	(.850)	(.893)
Age at retirement		−.000		−.059
		(.070)		(.073)
Time since retirement		.397**		.314*
		(.145)		(.154)
(Time since retirement)^2		−.019*		−.015
		(.009)		(.009)
Finance at retirement			−.937***	−.976***
			(.270)	(.278)
Health at retirement			.020	−.052
			(.187)	(.193)
Health at retirement × gender			−.554	−.560
			(.305)	(.314)
Selection bias (λ)	.394	.076	.260	−.051
	(.629)	(.655)	(.656)	(.688)
Constant	−1.790	−2.875	−1.133	1.598
−2LL	428.59	413.17	398.26	383.32
L^2	21.87	37.29	39.31	54.25
df	(376/10)	(373/13)	(362/13)	(359/16)
p-value	.016	.000	.000	.000

NOTE.—SEs are in parentheses.

[a] Women is the omitted category.

[b] Cohort 2 (1929–34) is the omitted category.

[c] Pathway type 5 (intermittent career) is the omitted category.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

hood of postretirement employment of those who retired because of poor health was somewhat lower than that of those who retired for other reasons (odds ratio = .790). In sum, the circumstances of retirement seem to strongly affect the likelihood of postretirement employment.

The last model, which incorporates all the variables examined thus far, shows a consistent pattern. By and large, as expected, the factors that most strongly influence the likelihood of postretirement employment are level of human capital (i.e., education) and financial situation. There might be two sides to this dynamic, supply and demand. On the demand side is the fact that the more educated retirees are given more chances to work.[19] On the supply side, retirees who are not adequately prepared financially need work. Put together, they produce a substantial effect. For instance, other things being equal, the odds of postretirement employment for those with a college degree, who have retired without adequate financial preparation, is estimated to be about four to five times that of those with a high school degree and adequate financial preparation.

We do not find significant differences between cohorts. Gender shows only a marginal effect, mainly due to the differential responses to the health situation at retirement. Pathway type—the way in which one's career came to an end, in particular—also has a marginally significant effect, showing intriguing differences. The delayed entry career pathway type clearly stands out from the pack. Less clear, but still substantial, are the coefficients for the orderly and high-geared pathway types ($.05 < P < .10$). Their odds ratios are .356 and .361, respectively. In other words, net of the other variables in the model, only a few of those following these two pathways are likely to return to work once they retire. Steady part-time and intermittent career pathway types are the ones with the most blurred boundary between work and nonwork. By and large, the effects of the three dimensions were not as strong as the ones we have found for retirement timing behaviors.

DISCUSSION AND CONCLUSIONS

We proposed a life course model of retirement in which retirement is timed on three dimensions—(historical) context, (social) heterogeneity, and (biographical) pacing. Using life history data for retired men and women, we found that all three affect various aspects of retirement and their temporal patterning, yet in different ways and for different reasons. The results of the analysis are hence rather complex. They can, however, be integrated

[19] Another possibility is that the more educated might have a greater "taste" for work (Parnes and Less 1985).

into and understood within a larger framework of our proposed model of multiplex time.

First, historical context, measured by cohort, is significant in explaining differences in the age respondents began planning, the target retirement age, the actual retirement age, and the likelihood of their taking an ERI. The effect on the latter, moreover, is distinguishable from the effect of the long-term trending down of retirement age. Second, we find gender differences in retirement timing; on average, men are more likely to be earlier than women on three of the variables associated with the temporal patterning of the retirement process. But the effects of gender on these variables are largely contingent upon the different career paths men and women have traveled, that is, the gendered nature of career pathways. Third, and finally, career pathway type, which summarizes the biographical pacing embodied in respondents' work history, shows the strongest effect on the actual timing of retirement. On average, those following an orderly career path retired the earliest, and within it, men more so than women. Career pathway type also affects the expectation of retirement timing but not its planning. We find no significant differences between men and women or between pathway types in terms of likelihood of taking an ERI, which strongly suggests that it might be period specific, experienced by all workers of certain ages as an exogenous shock. Among the dependent variables we examined, postretirement employment is distinct from the others in that it is the least affected by the three factors we hypothesized. Pathway type is the only significant, albeit weak, discriminating factor. Postretirement employment has long been considered an integral part of the overall process of the retirement transition, but it apparently is affected by something other than these three factors.

These findings serve to illuminate the puzzle with which we began: the peculiar pairing of the lowering of average age at retirement and its increasing variability. Context, heterogeneity, and pacing are all related to the increasingly early retirement age. The context effect, measured by cohort, shows a strong and consistent trend. Historical, structural, and institutional contexts in the latter half of the 20th century have steadily become more conducive to early retirement. Men, who have historically made up the majority of the labor force, are more likely to retire earlier than women, especially those following traditional career paths. In short, the decline in average retirement age seems to have been largely driven by long-term historical trends, affecting the traditional workforce most strongly.

On the other hand, all three factors have played parts, either alone or in combination, in making retirement timing more heterogeneous. Histori-

cal and institutional contexts have become less and less effective in enforcing any one age norm, primarily due to the developments that were in conflict with one another. Occasional external shocks, like the recent spell of massive and widespread downsizing, also produce more variability in timing. Given the gender difference in retirement timing, mainly due to the gap between men's and women's work experiences, the increasing rate of women's labor force participation has also contributed to increasing variability. Finally, the different pacing of retirement transition by those who experience various career pathways remains a major source of variability, partly due to the parallel development of increasing individuation and decreasing social regulation per se and partly due to changes occurring in the occupational and industrial structures that produce a more heterogeneous mix of career trajectories.

In sum, the temporal regularity with regard to retirement in the life course regime of the middle of the 20th century was a product of the convergence of diverse institutional features combined with the centrality of one group of the population, a large core of men on the traditional career paths—mainly the orderly pathway type—anchoring the norms. Recent changes in retirement timing might not have happened if at least one of these circumstances had held firm. But both have undergone changes, and the link between the two has become unhinged, producing the current situation.

The model we proposed seems to adequately explain changes in retirement timing and can be an effective framework for the study of life course institutionalization and deinstitutionalization in general, with a few qualifications. First, we need to be cautious in interpreting and generalizing these findings, given our data limitations. While our respondents are drawn randomly from six companies in upstate New York, they are not a representative national sample. For example, the women represented in our sample are rather a very select group, especially for the cohorts we studied. Whether the five career pathway types we identified comprehensively represent the population at large is, for instance, a question to be answered in the future with appropriate data.[20] The retirement process itself is also sensitive to historical context and continues to be in flux. The data also do not permit much variance in—and hence, the model did not include—other aspects of population heterogeneity, such as race or indus-

[20] See D'Unger et al. (1998). Most of the studies employing the sequence analysis technique so far have been based on relatively delimited data settings, e.g., German musicians in the 18th century (Abbott and Hrycak 1990), employees at Lloyds Bank (Stovel et al. 1996), and female senior executives in finance (Blair-Loy 1999).

try, which also could be pertinent (Henretta 1992; Rosenfeld 1980; Barfield and Morgan 1969).[21] Nor do our data provide a sufficiently wide cohort/period range to fully address the question of structural changes and their effects.

Second, in terms of the model, we need to elaborate and extend it further. For example, although tenure might serve as a rough proxy for eligibility and amount of pension, the model does not explicitly take into account the financial aspects of retirement timing. There is a large body of literature that emphasizes the role economic incentives play in retirement decisions (e.g., Hardy et al. 1996; Barfield and Morgan 1969). The findings to date on the link between the early exit trend and the financial incentives in retirement systems, however, are rather mixed (see Guillemard and Rein [1993] for a review). Some argue to have established a direct cause-effect relationship, while others argue that the link is far from certain (Doeringer 1990). Yet the baseline model we have used and the results we obtained seem to be robust and consistent with the finding that early exit may well have been imposed rather than chosen (Guillemard and Rein 1993, p. 479).

Also, the model focused on experiences only in work domain, yet events within single life domain usually cannot be fully understood without reference to events in other life domains (Settersten and Mayer 1997; Mayer and Tuma 1990). The most crucial is, of course, the family, where the notion of linked or interdependent lives becomes particularly salient (Elder 1994). For example, Henretta et al. (1993) found that a woman's employment during the childrearing years is associated with her earlier retirement, especially following her husband's retirement (also see Henretta and O'Rand 1983; O'Rand and Henretta 1982). Instead of looking at individual careers, hence, we need to be able to consider "coupled" careers as well as the interplay between family and work "careers" (Han and Moen 1999).

The last two decades have seen a growing interest and an explosive increase in theoretical and empirical studies of the social organization of the life course (see Mayer and Schoepflin [1989] for a review). Although a variety of relevant factors have been discussed, the multiplex nature of temporality has eluded an integrative model that can explain individual life events and social patterns of life trajectories within a common conceptual and empirical framework and represent the social processes that generate these events and trajectories (Mayer and Tuma 1990, p. 5). The conceptual model we presented is certainly one that takes into account multiple components, multiple levels, and multiple times. Recent changes

[21] For instance, the largest minority group consists of 22 African-Americans, accounting for only 2.9% of the initial sample.

in retirement timing provided a research site to illustrate the utility of such a model.

Finally, while transitions and trajectories are both crucial in understanding temporal patterning of life course, the analysis of transitions has been far more developed than that of trajectories. Much of the reason for this appears to be methodological, with increased attention to transitions fueled by growing interest and availability of event history analysis techniques (Pavalko 1995). As a result, the issue of timing has been typically addressed in an event history framework, where the focus is on the rate at which some event or transition, such as retirement, occurs. Noting the imbalance, we focused on trajectories, introducing a novel methodological technique, sequence analysis (Abbott 1995*a*), and empirically assessing career paths leading to retirement. By focusing on the overall career pathway, and embedding the retirement transition within it, we were able to look into the temporal dimensions underlying various retirement-related behaviors. We believe the two key concepts—transitions and trajectories—and the two methodological frameworks—event history analysis and sequence analysis—can and should be brought together more closely.

APPENDIX

Obtaining Interelement Distances

Interelement distances are obtained from the analysis of the complete transition matrices that report the distribution of transitions for all retirees in our sample over the entire period, from age 30 to retirement, for each of the three dimensions. For example, table A3 shows the number of transitions between the five work status categories. We first symmetrized and normalized the matrix. We then computed interelement distances based on comparisons of rows and columns using Euclidean distance algorithm, producing the results in table A4. The procedure was repeated separately for occupation and organization. Further technical details of the procedure used in the analysis, including the interelement distance matrices for occupation and organization, are available upon request.

APPENDIX

TABLE A1

MODELING SELECTION BIAS (λ) AND DESCRIPTIVE STATISTICS

VARIABLE	PROBIT REGRESSION COEFFICIENT	OVERALL MEAN	GROUP MEANS		
			Active	Retired	*P*
Gender (men = 1)	−.163	.504	.461	.533	
	(.144)				
Cohort:					
1 (1924–28)	.593**	.244	.049	.373	***
	(.189)				
2 (1929–34)	. . .	.299	.122	.417	***
3 (1935–43)	−1.640***	.457	.829	.210	***
	(.149)				
Education	−.058*	13.881	14.310	13.582	***
	(.023)				
Tenure	.027***	19.527	16.468	21.632	***
	(.006)				
Company:					
B	−2.679***	.140	.194	.105	***
	(.452)				
C	−2.299***	.270	.220	.304	*
	(.435)				
K	−1.691***	.223	.240	.212	
	(.428)				
N	−2.080***	.142	.165	.127	
	(.443)				
S	−2.761***	.106	.181	.057	***
	(.463)				
X	. . .	.118	.000	.197	***
Intercept	3.392				
	(.538)				
N		762	304	458	

NOTE.—*P* in this column indicates *F*-test on the difference between the two group means. SEs are in parentheses.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE A2

OCCUPATIONAL CATEGORY CODES

CRWB Code	Description	1990 Census Three-Digit Codes	SEI Score (S^*)
01	Executives, administrative, and managerial	003–022	66.80
02	Management related occupations	023–037	69.46
03	Engineers, architects, and surveyors	043–063	85.80
04	Mathematical and computer scientists	064–068	83.46
05	Natural scientists	069–083	83.41
06	Health, diagnosing	084–089	95.29
07	Health, assessment and treating	095–106	71.95
08	Teachers, post-secondary	113–154	82.84
09	Teachers, except post-secondary	155–159	74.69
10	Counselors, educational and vocational	163	81.00
11	Librarians, archivists, and curators	164–165	71.85
12	Social scientists and urban planners	166–173	83.93
13	Social, recreation, and religious workers	174–177	68.27
14	Lawyers and judges	178–179	91.84
15	Writers, artists, entertainers, athletes, and designers	183–199	65.19
16	Health, technologists, and technicians	203–208	53.15
17	Technologists and technicians, except health	213–218	61.22
18	Science technicians	223–225	59.60
19	Technicians, except health, engineering, and science	226–235	67.48
20	Sales, supervisors and proprietors	243	51.00
21	Sales representatives, finance and business services	253–257	66.31
22	Sales representatives, commodities, except retail	258–259	65.33
23	Sales workers, retail and personal services	263–278	36.58
24	Sales related	283–285	44.00
25	Administrative support, supervisors	303–307	53.58
26	Computer equipment operators	308–309	46.18
27	Secretaries, stenographers, and typists	313–315	38.26
28	Information clerks	316–323	40.00
29	Records processing, except financial	325–336	43.80
30	Financial records processing	337–344	37.36
31	Duplicating, mail and other office machine operators	345–347	35.74
32	Communications equipment operators	348–353	31.40
33	Mail and message distributing	354–357	48.17

TABLE A2 (*Continued*)

CRWB Code	Description	1990 Census Three-Digit Codes	SEI Score (S^*)
34	Material recording, scheduling, and distributing clerks	359–374	37.57
35	Adjusters and investigators	375–378	52.58
36	Miscellaneous administrative support	379–389	38.94
37	Private household	403–407	25.03
38	Protctive service, supervisors	413–415	62.55
39	Firefighting and fire prevention	416–417	52.16
40	Police and detectives	418–424	63.00
41	Guards	425–427	42.81
42	Food preparation and service	433–444	31.33
43	Health service	445–447	30.70
44	Cleaning and building service, except household	448–455	27.08
45	Personal service	456–469	31.96
46	Farm operators and managers	473–476	37.88
47	Farm occupations, except managerial	477–484	27.38
48	Related agricultural	485–489	31.90
49	Forestry and logging	494–496	31.90
50	Fishers, hunters, and trappers	497–499	37.50
51	Mechanics and repairers, supervisors	503	49.00
52	Mechanics and repairers	505–533	38.27
53	Heating, air conditioning, and refrigeration mechanics	534	39.00
54	Miscellaneous mechanics and repairers	535–549	40.45
55	Construction trades, supervisors	553–558	49.08
56	Construction trades	563–599	35.51
57	Extractive occupations	613–617	39.53
58	Precision production, supervisors	628	49.00
59	Precision production, except supervisors	634–699	34.66
60	Machine operators, assemblers, and inspectors	703–799	27.36
61	Transportation and material moving	803–859	33.33
62	Handlers, equipment cleaners, helpers, and laborers	864–889	30.09
63	Military	903–905	55.00
64	Not employed	909	(n/a)

NOTE.—SEI score (S^*) is assigned to each occupation code used in the Cornell Retirement and Well-Being study (CRWB) as follows: $S_i^* = \sum w_j S j$, where i indexes CRWB occupation code, and j indexes census three-digit code. w_j denotes j's relative frequency within i—f_j/N_i—taken from the GSS, and S_j is from Nakao and Treas (1994).

TABLE A3

TRANSITIONS BETWEEN WORK STATUS CATEGORIES

Element Code	1	2	3	4	5
1 Full-time	991	2	25	0	66
2 Alternate, F/T, P/T	6	0	1	0	2
3 Part-time	68	1	15	0	17
4 Sporadic, Seasonal	4	0	1	0	1
5 Unemployed/OLF	153	5	44	5	0

TABLE A4

INTERELEMENT DISTANCES

Element Code	1	2	3	4	5
1 Full-time	.000	.793	.782	.861	.682
2 Alternate, F/T, P/T	.793	.000	.502	1.000	.223
3 Part-time	.782	.502	.000	.680	.313
4 Sporadic, Seasonal	.861	1.000	.680	.000	.180
5 Unemployed/OLF	.682	.223	.313	.180	.000

REFERENCES

Abbott, Andrew. 1995*a*. "Sequence Analysis: New Methods for Old Ideas." *Annual Review of Sociology* 21:93–113.

———. 1995*b*. OPTIMIZE, ver. 2.12. University of Chicago, Department of Sociology.

Abbott, Andrew, and Emily Barman. 1997. "Sequence Comparison via Alignment and Gibbs Sampling: A Formal Analysis of the Emergence of the Modern Sociological Article." *Sociological Methodology* 27:47–87.

Abbott, Andrew, and Alexandra Hrycak. 1990. "Measuring Resemblance in Sequence Data: An Optimal Matching Analysis of Musicians' Careers." *American Journal of Sociology* 96:144–85.

Anderson, Michael. 1985. "The Emergence of the Modern Life Cycle in Britain." *Social History* 10:69–87.

Atchley, Robert C. 1982. "Retirement as a Social Institution." *Annual Review of Sociology* 8:263–87.

Barfield, Richard E., and James N. Morgan. 1969. *Early Retirement: The Decision and the Experience.* Ann Arbor: University of Michigan, Institute for Social Research.

Barley, Stephen R. 1989. "Careers, Identities, and Institutions: The Legacy of the Chicago School of Sociology." Pp. 41–65 in *Handbook of Career Theory*, edited by Michael B. Arthur, Douglas T. Hall, and Barbara S. Lawrence. New York: Cambridge University Press.

Becker, Gary S. [1964] 1993. *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education.* Chicago: University of Chicago Press.

Blair-Loy, Mary. 1999. "Career Patterns of Executive Women in Finance: An Optimal Matching Analysis." *American Journal of Sociology* 104 (5): 1346–97.

Breiger, Ronald L. 1995. "Social Structure and the Phenomenology of Attainment." *Annual Review of Sociology* 21:115–36.

Burt, Ronald S. 1983. "Cohesion versus Structural Equivalence as a Basis for Network Subgroups." Pp. 262–82 in *Applied Network Analysis: A Methodological Introduction,* edited by Ronald S. Burt and Michael J. Minor. Beverly Hills, Calif.: Sage.

———. 1991. "Measuring Age as a Structural Concept." *Social Networks* 13:1–34.

Campbell, Richard T., and Angela M. O'Rand. 1988. "Settings and Sequences: The Heuristics of Aging Research." Pp. 58–79 in *Emergent Theories of Aging,* edited by James E. Birren and Vern L. Bengston. New York: Springer.

Chan, Tak Wing. 1995. "Optimal Matching Analysis: A Methodological Note on Studying Career Mobility." *Work and Occupations* 22:467–90.

Dannefer, Dale. 1988. "What's in a Name? An Account of the Neglect of Variability in the Study of Aging." Pp. 356–84 in *Emergent Theories of Aging,* edited by James E. Birren and Vern L. Bengtson. New York: Springer.

DeViney, Stanley, and Angela M. O'Rand. 1988. "Gender-Cohort Succession and Retirement among Older Men and Women, 1951 to 1984." *Sociological Quarterly* 29: 525–40.

Doeringer, Peter B., ed. 1990. *Bridges to Retirement: Older Workers in a Changing Labor Market.* Ithaca, N.Y.: ILR Press.

D'Unger, Amy, Kenneth C. Land, Patricia L. McCall, and Daniel S. Nagin. 1998. "How Many Latent Classes of Delinquent/Criminal Careers? Results from Mixed Poisson Regression Analyses." *American Journal of Sociology* 103:1593–1630.

Ekerdt, David J., and Stanley DeViney. 1993. "Evidence for a Preretirement Process among Older Male Workers." *Journal of Gerontology: Social Sciences* 48:S35–S43.

Elder, Glen H., Jr. 1985. "Perspectives on the Life Course." Pp. 23–49 in *Life Course Dynamics: Trajectories and Transitions, 1968–1980,* edited by Glen H. Elder, Jr. Ithaca, N.Y.: Cornell University Press.

———. 1992. "The Life Course." Pp. 1120–30 in *The Encyclopedia of Sociology,* edited by Edgar F. Borgatta and Marie L. Borgatta. New York: Macmillan.

———. 1994. "Time, Human Agency, and Social Change: Perspectives on the Life Course." *Social Psychology Quarterly* 57:4–15.

———. 1995. "The Life Course Paradigm: Social Change and Individual Development." Pp. 101–39 in *Examining Lives in Context: Perspectives on the Ecology of Human Development,* edited by Phyllis Moen, Glen H. Elder, Jr., and Kurt Lüscher. Washington, D.C.: American Psychological Association.

Elder, Glen H., Jr., and Angela M. O'Rand. 1995. "Adult Lives in a Changing Society." Pp. 452–75 in *Sociological Perspectives on Social Psychology,* edited by Karen S. Cook, Gary Alan Fine, and James S. House. Boston: Allyn & Bacon.

Elder, Glen H., Jr., Eliza K. Pavalko. 1993. "Work Careers in Men's Later Years: Transitions, Trajectories, and Historical Change." *Journal of Gerontology: Social Sciences* 48:S180–S91.

Featherman, David L. 1986. "Biography, Society, and History: Individual Development as a Population Process." Pp. 99–149 in *Human Development and the Life Course: Multidisciplinary Perspectives,* edited by Aage B. Sørensen, Franz E. Weinert, and Lonnie R. Sherrod. Hillsdale, N.J.: L. Erlbaum.

George, Linda K. 1993. "Sociological Perspectives on Life Transitions." *Annual Review of Sociology* 19:353–73.

Graebner, William. 1980. *A History of Retirement: The Meaning and Function of an American Institution, 1885–1978.* New Haven, Conn.: Yale University Press.

Greene, William H. 1993. *Econometric Analysis,* 2d ed. New York: Macmillan.
Guillemard, Anne Marie, and Herman van Gunsteren. 1991. "Pathways and Prospects: A Comparative Interpretation of the Meaning of Early Exit." Pp. 362–88 in *Time for Retirement: Comparative Studies of Early Exit from the Labor Force,* edited by Martin Kohli, Martin Rein, Anne Marie Guillemard, and Herman van Gunsteren. New York: Cambridge University Press.
Guillemard, Anne Marie, and Martin Rein. 1993. "Comparative Patterns of Retirement: Recent Trends in Developed Societies." *Annual Review of Sociology* 19:469–503.
Han, Shin-Kap, and Phyllis Moen. 1999. "Coupled Careers: Men's and Women's Pathways through Work and Marriage in the United States." In *Couples' Careers in a Dynamic Perspective,* edited by Hans-Peter Blossfeld. In press.
Hardy, Melissa A., Lawrence Hazelrigg, and Jill Quadagno. 1996. *Ending a Career in the Auto Industry: "30 and Out."* New York: Plenum.
Heckman, James J. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47:153–61.
Henretta, John C. 1992. "Uniformity and Diversity: Life Course Institutionalization and Late-Life Work Exit." *Sociological Quarterly* 33:265–79.
Henretta, John C., and Hyunkee Lee. 1996. "Cohort Differences in Men's Late-Life Labor Force Participation." *Work and Occupations* 23:214–35.
Henretta, John C., and Angela M. O'Rand. 1983. "Joint Retirement in the Dual Worker Family." *Social Forces* 62:504–20.
Henretta, John C., Angela M. O'Rand, and Christopher G. Chan. 1993. "Joint Role Investments and Synchronization of Retirement: A Sequential Approach to Couples' Retirement Timing." *Social Forces* 71:981–1000.
Hogan, Dennis P. 1978. "The Variable Order of Events in the Life Course." *American Sociological Review* 43:573–86.
Hogan, Dennis P., and Nan Marie Astone. 1986. "The Transition to Adulthood." *Annual Review of Sociology* 12:109–30.
Hughes, Everett C. [1937] 1994. "Institutional Office and the Person." Pp. 136–45 in *On Work, Race, and the Sociological Imagination,* edited by Lewis A. Coser. Chicago: University of Chicago Press.
Jacobs, Klaus, Martin Kohli, and Martin Rein. 1991. "Testing the Industry-Mix Hypothesis of Early Exit." Pp. 67–96 in *Time for Retirement: Comparative Studies of Early Exit from the Labor Force,* edited by Martin Kohli, Martin Rein, Anne-Marie Guillemard, and Herman van Gunsteren. New York: Cambridge University Press.
Juster, F. Thomas. 1992. Health and Retirement Survey. University of Michigan, Institute for Social Research, Survey Research Center.
Kalleberg, Arne L., David Knoke, and Peter V. Marsden. 1995. "Interorganizational Networks and the Changing Employment Contract." *Connections* 18:32–49.
Kanter, Rosabeth M. 1989. *When Giants Learn to Dance.* New York: Simon & Schuster.
Kohli, Martin, and Martin Rein. 1991. "The Changing Balance of Work and Retirement." Pp. 1–35 in *Time for Retirement: Comparative Studies of Early Exit from the Labor Force,* edited by Martin Kohli, Martin Rein, Anne-Marie Guillemard, and Herman van Gunsteren. New York: Cambridge University Press.
Kotter, John P. 1995. *The New Rules: How to Succeed in Today's Post-Corporate World.* New York: Free Press.
Kreps, Juanita, and Robert Clark. 1975. *Sex, Age, and Work: The Changing Composition of the Labor Force.* Baltimore: Johns Hopkins University Press.
Maddox, George L. 1987. "Aging Differently." *Gerontologist* 27:557–64.
Marini, Margaret Mooney. 1984. "Age and Sequencing Norms in the Transition to Adulthood." *Social Forces* 63:229–44.

Masnick, George, and Mary Jo Bane. 1980. *The Nation's Families: 1960–1990.* Cambridge, Mass.: Joint Center for Urban Studies of MIT and Harvard University.

Mayer, Karl Ulrich. 1986. "Structural Constraints in the Life Course." *Human Development* 29:163–70.

Mayer, Karl Ulrich, and Urs Schoepflin. 1989. "The State and the Life Course." *Annual Review of Sociology* 15:187–209.

Mayer, Karl Ulrich, and Nancy B. Tuma. 1990. "Life Course Research and Event History Analysis: An Overview." Pp. 3–20 in *Event History Analysis in Life Course Research,* edited by Karl Ulrich Mayer and Nancy B. Tuma. Madison: University of Wisconsin Press.

Mincer, Jacob. 1974. *Schooling, Experience, and Earnings.* New York: National Bureau of Economic Research.

Mitchell, Olivia S., and Gary S. Fields. 1982. "The Effects of Pensions and Earnings on Retirement: A Review Essay." *Research in Labor Economics* 5:115–55.

Modell, John. 1989. *Into One's Own: From Youth to Adulthood in the United States, 1920–1975.* Berkeley and Los Angeles: University of California Press.

Moen, Phyllis. 1985. "Continuities and Discontinuities in Women's Labor Force Activity." Pp. 113–55 in *Life Course Dynamics: Trajectories and Transitions, 1968–1980,* edited by Glen H. Elder, Jr. Ithaca, N.Y.: Cornell University Press.

———. 1996*a*. "Gender, Age, and the Life Course." Pp. 171–87 in *Handbook of Aging and the Social Sciences,* 4th ed. Edited by Robert H. Binstock and Linda K. George. San Diego, Calif.: Academic Press.

———. 1996*b*. "A Life Course Perspective on Retirement, Gender, and Well-Being." *Journal of Occupational Health Psychology* 1:131–44.

Mutchler, Jan E., Jeffrey A. Burr, Amy M. Pienta, and Michael P. Massaglil. 1997. "Pathways to Labor Force Exit: Work Transitions and Work Instability." *Journal of Gerontology: Social Sciences* 52B:S4–S12.

Nakao, Keiko, and Judith Treas. 1994. "Updating Occupational Prestige and Socioeconomic Scores: How the New Measures Measure Up." *Sociological Methodology* 24:1–72.

Nestel, Gilbert. 1985. "Retirement Expectation and the Timing of Retirement." Pp. 79–89 in *Retirement among American Men,* edited by Herbert S. Parnes et al. Lexington, Mass.: Lexington Press.

Neugarten, Bernice L. 1979. "Time, Age, and the Life Cycle." *American Journal of Psychiatry* 136:887–94.

Neugarten, Bernice L., and Gunhild O. Hagestad. 1976. "Age and the Life Course." Pp. 25–55 in *Handbook of Aging and the Social Sciences,* edited by Robert H. Binstock and Ethel Shanas. New York: Van Nostrand Reinhold.

O'Rand, Angela M. 1996. "Structuration and Individualization: The Life Course as a Continuous, Multilevel Process." Pp. 3–16 in *Generating Social Stratification: Toward a New Research Agenda,* edited by Alan C. Kerckhoff. Boulder, Colo.: Westview Press.

O'Rand, Angela M., and John C. Henretta. 1982. "Delayed Career Entry, Industrial Pension Structure, and Early Retirement in a Cohort of Unmarried Women." *American Sociological Review* 47:365–73.

Osterman, Paul. 1988. *Employment Futures: Reorganization, Dislocation, and Public Policy.* New York: Oxford University Press.

Pampel, Fred C., and Sookja Park. 1986. "Cross-National Patterns and Determinants of Female Retirement." *American Journal of Sociology* 91:932–55.

Pampel, Fred C., and Jane A. Weise. 1983. "Economic Development, Pension Policies, and the Labor Force Participation of Aged Males: A Cross-National, Longitudinal Approach." *American Journal of Sociology* 89:350–72.

Parnes, Herbert S., and Lawrence Less. 1985. "The Volume and Pattern of Retirements, 1966–1981." Pp. 57–77 in *Retirement among American Men,* edited by Herbert S. Parnes. Lexington, Mass.: Lexington Press.

Parnes, Herbert S., and Gilbert Nestel. 1981. "The Retirement Experience." Pp. 155–97 in *Work and Retirement: A Longitudinal Study of Men,* edited by Herbert S. Parnes. Cambridge, Mass.: MIT Press.

Pavalko, Eliza K. 1995. "Transitions and Trajectories as Concepts for Understanding Social Change and Individual Lives." Paper presented at the 1995 ASA annual meeting, Washington, D.C.

Pavalko, Eliza K., Glen H. Elder, Jr., and Elizabeth C. Clipp. 1993. "Work Lives and Longevity: Insights from a Life Course Perspective." *Journal of Health and Social Behavior* 34:363–80.

Petersen, Trond, and Seymour Spilerman. 1990. "Job Quits from an Internal Labor Market." Pp. 69–95 in *Event History Analysis in Life Course Research,* Karl Ulrich Mayer and Nancy B. Tuma. Madison: University of Wisconsin Press.

Quinn, Joseph F., and Richard V. Burkhauser. 1994. "Retirement and Labor Force Behavior of the Elderly." Pp. 50–101 in *Demography of Aging,* edited by Linda Martin and Samuel Preston. Washington, D.C.: National Academy of Science.

Quinn, Joseph F., Richard V. Burkhauser, and Daniel A. Myers. 1990. *Passing the Torch: The Influence of Financial Incentives on Work and Retirement.* Kalamazoo, Mich.: W. E. Upjohn Institute on Employment Research.

Quinn, Robert P., and Graham L. Staines. 1979. The 1977 Quality of Employment Survey. University of Michigan, Institute for Social Research, Survey Research Center.

Ransom, Roger L., and Richard Sutch. 1986. "The Labor of Older Americans: Retirement of Men On and Off the Job, 1870–1937." *Journal of Economic History* 46: 1–30.

Riley, Matilda W., and John W. Riley, Jr. 1994. "Structural Lag: Past and Future." Pp. 15–36 in *Age and Structural Lag: Society's Failure to Provide Meaningful Opportunities in Work, Family, and Leisure,* edited by Matilda W. Riley, Robert L. Kahn, and Anne Foner. New York: Wiley & Sons.

Rindfuss, Ronald R., C. Gray Swicegood, and Rachel A. Rosenfeld. 1987. "Disorder in the Life Course: How Common and Does It Matter?" *American Sociological Review* 52:785–801.

Rosenbaum, James E. 1984. *Career Mobility in a Corporate Hierarchy.* Orlando, Fla.: Academic Press.

Rosenfeld, Rachel A. 1980. "Race and Sex Differences in Career Dynamics." *American Sociological Review* 45:583–609.

———. 1992. "Job Mobility and Career Processes." *Annual Review of Sociology* 18: 39–61.

Ryder, Norman B. 1965. "The Cohort as a Concept in the Study of Social Change." *American Sociological Review* 30:843–61.

Settersten, Richard A., Jr., and Karl Ulrich Mayer. 1997. "The Measurement of Age, Age Structuring, and the Life Course." *Annual Review of Sociology* 23:233–61.

Sørensen, Aage B., and Nancy B. Tuma. 1981. "Labor Market Structures and Job Mobility." *Research in Social Stratification and Mobility* 1:67–94.

Spenner, Kenneth I., Luther B. Otto, and Vaughn R. A. Call. 1982. *Career Lines and Career.* Lexington, Mass.: Lexington Press.

Spilerman, Seymour. 1977. "Careers, Labor Market Structure, and Socioeconomic Attainment." *American Journal of Sociology* 83:551–93.

Stovel, Katherine. 1996. DISTANCE. University of North Carolina at Chapel Hill, Department of Sociology.

Stovel, Katherine, Michael Savage, and Peter Bearman. 1996. "Ascription into

Achievement: Models of Career Systems at Lloyds Bank, 1890–1970." *American Journal of Sociology* 102:358–99.
Streib, Gordon F., and Clement J. Schneider. 1971. *Retirement in American Society: Impact and Process.* Ithaca, N.Y.: Cornell University Press
Tomaskovic-Devey, Donald. 1993. "Labor-Process Inequality and the Gender and Race Composition of Jobs." *Research in Social Stratification and Mobility* 12:215–47.
Tuma, Nancy B., and Michael T. Hannan. 1984. *Social Dynamics: Models and Methods.* Orlando, Fla.: Academic Press.
Tuma, Nancy B., and Gary D. Sandefur. 1988. "Trends in the Labor Force Activity of the Elderly in the United States, 1940–1980." Pp. 38–83 in *Issues in Contemporary Retirement,* edited by Rita Ricardo-Campbell and Edward P. Lazear. Stanford, Calif.: Hoover Institution Press.
Waite, Linda J. 1981. "U.S. Women at Work." *Population Bulletin* 36:1–45.
White, Harrison C., Scott A. Boorman, and Ronald L. Breiger. 1976. "Social Structure from Multiple Networks. I.: Blockmodels of Roles and Positions." *American Journal of Sociology* 81:730–80.
Wilensky, Harold L. 1961. "Orderly Careers and Social Participation: The Impact of Work History on Social Integration in the Middle Class." *American Sociological Review* 26:521–39.
Winship, Christopher, and Robert D. Mare. 1992. "Models for Sample Selection Bias." *Annual Review of Sociology* 18:327–50.